



UNITED STATES PATENT AND TRADEMARK OFFICE

A

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,193	02/24/2004	Yoshiaki Okui	118827	1085
25944	7590	03/08/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER TIBBITS, PIA FLORENCE	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/784,193

Applicant(s)

OKUI, YOSHIAKI

Examiner

Pia F. Tibbits

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

This Office action is in answer to the amendment filed 2/24/2004. Claims 1-20 are pending.

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the midway, the mutual transducer, the transducer must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. For example, "it is more prefer the limited discharge current of the storage battery" in paragraph 0015 needs to be corrected.

3. Applicant is reminded to use consistent language throughout the disclosure in order to facilitate finding support for the recited limitations, as well as to provide proper antecedence for all claimed

Art Unit: 2838

limitations. For example, claim 11 recites an integration circuit, while fig.7 shows integrator element 15, which is part of the judgment circuit.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter: "rated current", "limited current", "base current", "whole load apparatus". Applicant to define all these limitations. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction is required.

Claim Objections

5. Claim 13 is objected to because of the following informalities: "with a of base current" to be corrected. Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over prior art disclosed by applicant, **JP-2000050525** [hereinafter JP].

JP discloses in the abstract and figures 1-5 an uninterruptible power supply device for supplying power to a load 20 and charging floatingly to a storage battery 34 from a converter 32 connecting to an alternating current power source 31, with the degradation judgment circuit of the storage battery 35, comprising; a control circuit 35 for controlling an output voltage of the converter 32 to lower below a steady state/"lowering the output voltage of the converter 32 to a value which is higher than the normal operating voltage of the load device 20, but lower than the open voltage of the battery 34", the storage battery thus to discharge at a more limited current than the rated current thereof/prescribed current to the load device 20, and the converter to supply a part of load current to the load 20; and a judgment circuit 35 for judging the degradation/deterioration of the storage battery based on the discharge voltage of the limited discharge current.

Art Unit: 2838

JP discloses the claimed invention except for making the control circuit and the judgment circuit separate: it would have been obvious to one of ordinary skill in the art at the time the invention was made to make separable the control circuit and the judgment circuit in order to simplify the control circuit, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *In re Dulberg*, 289 F.2d 522, 523, 129 USPQ 348, 349 (CCPA 1961). See MPEP 2144.04.

8. Claims 1, 7, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Wong et al.** [6509657].

Wong discloses in figures 1-6 an uninterruptible power supply device 10 for supplying power to a load/computer and charging floatingly to a storage battery 26 from a converter 12 connecting to an alternating current power source 18, with the degradation judgment circuit 20 of the storage battery 26, comprising; a control circuit 22 for controlling an output voltage of the converter 12 to lower below a steady state/reference voltage REF [column 2, line 19], the storage battery 26 thus to discharge at a more limited current than the rated current thereof/changes in the status of the power supply unit, and the converter 12 to supply a part of load current to the load 16, and a judgment circuit/computer motherboard 20 [see abstract]. Wong does not disclose specifically judging the degradation of the storage battery 10 based on the discharge voltage of the limited discharge current. However, Wong discloses changes in the status of the power supply unit, battery backup unit and battery pack can be communicated to the motherboard in order to notify the computer's operating system of the changes, e.g. output voltage of the battery 26 [see column 3, lines 28-49]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made that the prior art element (A) performs the function specified in the claim, (B) is not excluded by any explicit definition provided in the specification for an equivalent, and (C) is an equivalent of the means- (or step-) plus-function limitation, so that the prior art element performs the identical function specified in the claim in substantially the same way, and produces substantially the same results as the corresponding element

Art Unit: 2838

disclosed in the specification. *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 54 USPQ2d 1308 (Fed. Cir. 2000).

As to claim 7, the discharge current of the storage battery is almost constant what is equivalent to 10-50% of the maximum current of the load, absent any criticality, is only considered to be the use of "optimum" or "preferred" range that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the discharge current of the storage battery disclosed by Wong in order to accommodate application specifics, since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. See *In re Leshin*, 125 USPQ 416. *In re Aller*, 105 USPQ 233 (CCPA 1955), *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

As to claims 8, 10, see remarks and reference above.

9. Claims 3, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over prior art disclosed by applicant, **JP-2000050525**, as described above, in view of **JP-2000139040**.

JP-2000050525 does not disclose the load includes a direct-alternating current inverter in addition to a whole load apparatus.

JP-2000139040 discloses in the abstract an uninterruptible power supply including an output changing-over switch 5 is provided to select either the AC output of the inverter circuit 4 or the output of the by-pass circuit 8 which feeds the commercial power 2, and to feed the load apparatus 6 in order to stabilize an output and to widen permissible input voltage by providing an output changing-over circuit capable of selecting and changing over a commercial power source and the AC output of an inverter circuit, and by providing an operating action controlling circuit that changes over to an operating action with the DC current stored in a battery. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify JP-2000050525's apparatus and include JP-2000139040's teachings in order to stabilize an output and to widen permissible input voltage

Art Unit: 2838

by providing an output changing-over circuit capable of selecting and changing over a commercial power source and the AC output of an inverter circuit, and by providing an operating action controlling circuit that changes over to an operating action with the DC current stored in a battery.

As to claim 4, with regard to the particular location of the inverter, i.e., midway between the storage battery and the load, absent any criticality, is only considered to be an obvious modification as it has been held by the courts that there would be no invention in shifting the location of a structure of a device to another location if the operation of the device would not thereby be modified. *In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950) MPEP 2144.04.

As to claims 5, 6, see remarks and references above.

10. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **GB-2287843** in view of **JP-2000050525**, as described above.

As to claim 1, GB discloses in figures 1-30 an uninterruptible power supply device 10 [fig.2A] for supplying power to a load and charging floatingly to a storage battery from a converter connecting to an alternating current power source, with the degradation judgment circuit of the storage battery, comprising; a control circuit 50 for controlling an output voltage of the converter 38 to lower below a steady state, the storage battery 18 thus to discharge at a more limited current than the rated current thereof, and the converter to supply a part of load current to the load [see fig.2A; abstract; pages 17, 18]. GB does not disclose a judgment circuit for judging the degradation of the storage battery based on the discharge voltage of the limited discharge current.

JP discloses in the abstract and figures 1-5 a control section 35 that discriminates deterioration of the battery 34 based on the time required, until the output current of the converter 32 becomes a prescribed value or higher, after lowering the output voltage of the converter 32 to a value which is higher than the normal operating voltage of the load device 20, but lower than the open voltage of the battery 34 in order to provide an uninterruptible power supply device which can easily discriminate deterioration of a battery, even when the discharging rate of the battery is high. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify

Art Unit: 2838

GB's monitoring control unit 50 and include JP's teachings in order to provide an uninterruptible power supply device which can easily discriminate deterioration of a battery, even when the discharging rate of the battery is high.

As to claim 2, GB discloses in figures 1-30 an uninterruptible power supply device [fig.2A] for supplying power to a load and charging floatingly to a storage battery from a converter connecting to a alternating current power source, with the degradation judgment circuit of the storage battery, comprising; a control circuit 50 for controlling an output voltage of the converter 38 to lower below a steady state, the storage battery 18 thus to discharge at a more limited current than the rated current thereof, and the converter 38 to supply a part of load current to the load 16; the converter to return the output voltage to the steady state until completing full charge state thereof [see fig.2A; abstract; pages 17, 18]. GB does not disclose a judgment circuit judges the degradation of the storage battery based on a charging time of the storage battery from when controlling, by the control circuit.

JP discloses in the abstract and figures 1-5 a control section 35 that discriminates deterioration of the battery 34 based on the time required, until the output current of the converter 32 becomes a prescribed value or higher, after lowering the output voltage of the converter 32 to a value which is higher than the normal operating voltage of the load device 20, but lower than the open voltage of the battery 34 in order to provide an uninterruptible power supply device which can easily discriminate deterioration of a battery, even when the discharging rate of the battery is high. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify GB's monitoring control unit 50 and include JP's teachings in order to provide an uninterruptible power supply device which can easily discriminate deterioration of a battery, even when the discharging rate of the battery is high.

As to claims 3-20, see remarks and references above.

Art Unit: 2838

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited in PTO-892 and not mentioned above disclose related apparatus.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is 571-272-2086. If unavailable, contact the Supervisory Patent Examiner Karl Easthom whose telephone number is 571-272-1989. The Technology Center Fax number is 571-273-8300.

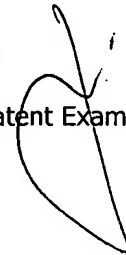
13. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFT

February 26, 2006

Pia Tibbits

Primary Patent Examiner

A handwritten signature in black ink, appearing to be 'Pia Tibbits', written over the printed name.